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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re application of: Crim et al.

Attorney Docket No.: CLARP027/P2616

Application No.: 09/771,143

Examiner: PHAM, HUNG Q.

Filed: January 26, 2001

Group: 2168

Title: USING A CALCULATION EXPRESSION  
TO DEFINE AND CONTROL ACCESS  
RIGHTS FOR RECORDS IN A DATABASE

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Confirmation No.: 6194

**APPEAL BRIEF TRANSMITTAL  
(37 CFR 192)**

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Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on October 25, 2006.

This application is on behalf of

Small Entity       Large Entity

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Respectfully submitted,  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Ex Parte Crim et al.

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Application for Patent: 09/771,143

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Group Art Unit: 2168

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For:

USING A CALCULATION EXPRESSION TO DEFINE AND CONTROL ACCESS  
RIGHTS FOR RECORDS IN A DATABASE

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APPEAL BRIEF

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## TABLE OF CONTENTS

<b>1. REAL PARTY IN INTEREST .....</b>	4
<b>2. RELATED APPEALS AND INTERFERENCES .....</b>	4
<b>3. STATUS OF CLAIMS .....</b>	4
<b>4. STATUS OF AMENDMENTS .....</b>	4
<b>5. SUMMARY OF CLAIMED SUBJECT MATTER.....</b>	4
5.1. <u>Independent Claim 11</u> .....	4
5.2. <u>Independent Claim 38</u> .....	8
<b>6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL .....</b>	9
<b>7. ARGUMENT.....</b>	9
7.1. <b>Ground I:</b> Claim 11-15 and 38-42 rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Bapat et al. (U.S. Patent No. 6,236,996 B1) in view of Elmasri et al. (Fundamentals of Database System). .....	9
7.1.1. <i>Bapat et al. does NOT teach or suggest defining a calculation expression as a variable expression defined based on a field of data used in records stored in a database, wherein the calculation expression can be evaluated based on the field of data, thereby allowing access to each individual record of the database to be selectively controlled based on a value of a field of data stored for each of the records of the database (Claims 11 and 38)</i> .....	9
7.1.2. <i>Bapat et al. does NOT teach or suggest defining a calculation expression that can be evaluated based on a state variable of a database (claim 14)</i> .....	13
7.1.3. <i>Bapat et al. does NOT teach or suggest evaluating a calculation expression for a plurality of records based on a field of data stored for each record (claim 11 and 38)</i> .....	13
7.1.4. <i>Bapat et al. does NOT teach or suggest determining at least one value for a field of data stored in a record and using it to evaluate a variable expression in order to control access to that record (claims 11 and 38)</i> .....	14
7.1.5. <i>The Examiner has failed to establish a prima facie case of obviousness because the Examiner has failed to address the claimed feature of: "defining a calculation expression for a password" (claims 11 and 38)</i> .....	14
7.1.6. <i>The cited art does not teach or suggest defining a calculation expression for a password (claims 11 and 38)</i> .....	15
7.1.7. <i>The Examiner has failed to establish a prima facie case of obviousness because the Examiner has failed to provide a motivation or suggestion for defining a calculation expression for a password (claims 11 and 38)</i> .....	15

<b>7.2.</b>	<b><u>Ground II:</u></b> Claims 11-15 and 38-42 rejected under 35 U.S.C. § 101 .....	15
<b>7.3.</b>	<b><u>Ground III:</u></b> Claims 11 and 38 rejected under 35 U.S.C. § 112, first paragraph .....	16
<b>7.4.</b>	<b><u>Ground IV:</u></b> Claims 11 and 38 are rejected under 35 U.S.C. § 112, second paragraph.....	17
<b>8.</b>	<b>CONCLUSION .....</b>	19
<b>9.</b>	<b>CLAIMS APPENDIX.....</b>	20
<b>10.</b>	<b>EVIDENCE APPENDIX.....</b>	24
<b>11.</b>	<b>RELATED PROCEEDINGS APPENDIX .....</b>	25
<b>12.</b>	<b>APPENDIX A .....</b>	26

## **1. REAL PARTY IN INTEREST**

The real party in interest is Apple Computer, Inc., the assignee of the present application, having an address at 1 Infinite Loop, M/S 3-PAT, Cupertino, CA 95014.

## **2. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

## **3. STATUS OF CLAIMS**

Claims 11-15 and 38-42 have been rejected by the Examiner and are being appealed before the Board.

Claims 1-10, 16-37, 44 and 48-50 have already been cancelled.

Claims 43, 45-47 and 51-58 are cancelled by an amendment submitted herewith.

The claims on appeal (11-15 and 38-42) are reproduced below in the Appendix at Section 9 of this Appeal Brief.

## **4. STATUS OF AMENDMENTS**

An After Final Amendment dated July 25, 2006 was filed in response to the Final Office Action mailed on May 25, 2006. The After Final Amendment amended claims 11-15 which are being appealed. However, the Examiner has not entered the After Final Amendment. Accordingly, Claims Appendix of this Appeal Brief presents the status of claims being appealed (11-15 and 38-42) prior to the After Final Amendment and therefore includes all the amendments entered by the Examiner.

An Amendment to claims 11-15 and 38 is hereby submitted herewith. This Amendment only seeks to address the grounds of rejection under 35 U.S.C. 101 and 35 U.S.C. 112, second paragraph.

## **5. SUMMARY OF CLAIMED SUBJECT MATTER**

### ***5.1. Independent Claim 11***

The present application relates to techniques for controlling access to records stored in a database. As a representative claim, claim 11 pertains to a method for controlling access to records stored in a database and recites:

“identifying a password that is associated with one or more users of the database”

As noted in the specification with reference to Figure 2, at operation 202, an access identifier is defined. The access identifier can, for example, be a password associated with a user or a group of users of the database (Specification, page 9, lines 12-16).

Claim 11 further recites:

“defining a calculation expression for said identified password”

Again, referring to Figure 2 of the application, at operation 210, an expression is effectively defined for the identifier with respect to an operation (Specification, page 10, lines 1-2). Referring to Figure 7 of the application, an exemplary calculation expression 604 is depicted. As shown in Figure 7, the calculation expression 604 (Billing State = “CA”) specifies a formula for controlling edit access to records in a specify calculation window 700. As such, the calculation expression defines access privileges of one or more users with respect to at least one operation that may be requested to be performed by the one or more users on a plurality of records of the database (claim 11).

Claim 11 further recites:

“wherein said calculation expression is a variable expression defined based on at least one field of data used in a plurality of records stored in said database, wherein said calculation expression can be evaluated at least partly based on said at least one field of data used in said plurality of records, wherein said at least one field of data is a variable which may have different values for each of said plurality of records, thereby allowing access to each individual record of said plurality of records to be selectively controlled based on at least one value of said at least one field of data stored for each of said plurality of records of said database” (claim 11).

As noted on page 14 of the specification, a calculation expression can be defined based on various fields of records stored in a database, as well as other variables, for example, the state information of the database (e.g., date, time, number of records, etc.). Accordingly, access can be defined based on a calculation expression (Specification, page 10, lines 2-6). More particularly, a calculation expression can be evaluated to determine whether access should be granted with respect to an operation that is requested to be performed on a record stored in the database. Accordingly, a user or group of users associated with a password can be granted or denied access to the records of the database based on a calculation

expression that can be defined with respect to an operation that can be performed on a record (Specification, page 14, lines 13-18). To illustrate, Figure 8 of the application depicts an exemplary file ACCOUNTS that includes records “ACC001”, “ACC002”, “ACC003” and “ACC004” displayed in a window 800. For example, these records can represent billing addresses of customers. As noted in the specification, a field “State” can indicate the state portion of the billing address for the customer.

Considering the exemplary calculation expression 604 of Figure 7, access to a record with respect to an operation would be granted only when the field “State” (Billing State) of that record is equal to “CA.” Accordingly, using the calculation expression 604, access to records shown in Figure 8 with respect to editing privileges, for example, would be limited to editing records “ACC001”, “ACC002”, and “ACC004” (Specification, page 14, lines 18-29).

Claim 11 additionally recites:

“receiving a request to perform said at least one operation on said plurality of records of said database, said request being identified as a request made by said one or more users associated with said password; and

evaluating said calculation expression for each of said plurality of records, based on said at least one field of data, when said request has been received, wherein said evaluating comprises: (a) determining at least one value for said at least one field of data stored for a first record of said plurality of records, (b) using said at least one value as input to said calculation expression to evaluate said calculation expression for said first record, and (c) determining a first result for said calculation expression based on said evaluation of said calculation expression for said first record, wherein said first result effectively indicates whether to grant access to said first record.”

Referring to Figure 9 of the application, at operation 902, a request to access a record can be received. Further, an expression can be evaluated (906) to determine whether to allow access to the record based on the evaluation performed for the record. Referring back to the example depicted in Figure 8 of the application, it is clear that when the calculation expression 604 depicted in Figure 6 (Billing State = “CA”) is evaluated, for example, for the first record, the value of the sixth (6<sup>th</sup>) field (Billing State) is initially determined. As such, this determining (a) determines that the sixth (6<sup>th</sup>) field (Billing State) stores data representing “CA.” Subsequently, the data (“CA”) obtained from the sixth (6<sup>th</sup>) field (Billing State) of the first record can be used as input to the calculation expression 604 (Billing State = “CA”). In other

words, actual data (“CA”) is used as input for the variable field “Billing State” expressed in the calculation expression 604 in order to evaluate (b) the calculation expression. Finally, based on the evaluation (b) a first result can be determined (c) to effectively indicate whether to grant access to the first record. In this example, the evaluating (b) would result in an indication to grant access since the data of the sixth (6<sup>th</sup>) field (Billing State) is equal to the value specified in the calculation expression 604 (“CA”). However, as noted in the specification, the same user would not be granted editing privileges to a record that does not store the value (“CA”) in its sixth (6<sup>th</sup>) field (Billing State). See for example, the third (3<sup>rd</sup>) record shown in Figure 8 of the present application. In this way, a calculation expression can be evaluated for multiple records to determine whether to grant or deny access to each record (Specification, page 14, lines 27-31).

To summarize, Figure A of Appendix A provided in Section 12 of the Appeal Brief depicts a database 10 that includes a plurality of tables (or files) 12 where a particular table (or file) 12a is represented with a plurality of records R (R<sub>1</sub>-R<sub>n</sub>). Referring to Figure A of Appendix A, a particular record R<sub>1</sub> is represented with a plurality of fields F<sub>1</sub>, F<sub>2</sub>, F<sub>3</sub>, F<sub>4</sub> and F<sub>5</sub>, respectively storing data D<sub>11</sub>, D<sub>12</sub>, D<sub>13</sub>, D<sub>14</sub> and D<sub>15</sub>. Database users U<sub>1</sub> and U<sub>2</sub> are also depicted in Figure A of Appendix A where passwords P<sub>1</sub> and P<sub>2</sub> are respectively associated with the database users U<sub>1</sub> and U<sub>2</sub>. Moreover, calculation expressions C<sub>1</sub> and C<sub>2</sub> are defined respectively for passwords P<sub>1</sub> and P<sub>2</sub> associated with database users U<sub>1</sub> and U<sub>2</sub>. Similar to the example noted above, the calculation expression C<sub>1</sub> is expressed as: (F<sub>2</sub> = ‘CA’).

The calculation expression C<sub>1</sub> defines access for the first password P<sub>1</sub> and thereby the first database user U<sub>1</sub>. Moreover, Calculation expression C<sub>1</sub> can be evaluated for each of the individual records (R<sub>1</sub>- R<sub>n</sub>). This means that in order to evaluate the calculation expression C<sub>1</sub> (F<sub>2</sub> = ‘CA’) for the first record (R<sub>1</sub>), the data in the corresponding field (F<sub>2</sub>) is obtained and subsequently used to evaluate the calculation expression C<sub>1</sub> in order to determine whether the first database user U<sub>1</sub> should be granted access to the first record. Thus, actual data in the second field (F<sub>2</sub>) of the first record (R<sub>1</sub>), namely, D<sub>12</sub> is used to determine whether access to the first record R<sub>1</sub> should be granted. Next, the second field (F<sub>2</sub>) of the second record (R<sub>2</sub>), namely D<sub>22</sub>, can be used to evaluate the calculation expression C<sub>1</sub> (F<sub>2</sub> = ‘CA’) for the second record, and so on.

It should be noted that more complex calculation expressions can be defined. To provide an example, Figure A of Appendix A depicts a calculation expression C2 expressed as  $(F1 + F2) \geq \text{‘Constant Value K’}$  which can also be evaluated individually for each one of the records  $R_1, R_n$ . To evaluate this expression for the first record ( $R_1$ ), data actually stored in the first and second fields ( $F1$  and  $F2$ ) are obtained and subsequently added together to determine their sum. This means the actual data values  $D_{11}$  and  $D_{12}$  are obtained and then added together to determine whether the sum is greater or equal to the ‘Constant Value K’. This, for example, would allow access to all the records where the billing amount for two given years (provided in two fields of a record) is equal or exceeds a particular amount.

It is apparent that more complex calculation expressions can be defined using variables in accordance with the claimed invention. As noted in the specification, a calculation expression can be defined based on various fields of the records in the database, as well as other variables, for example, the state information of the database (e.g., date, time, number of records, etc.) (See, for example, page 10, lines 2-6 of the specification). For example, a third calculation expression C3 can be expressed as:

( $F1 + F2 \geq \text{‘Constant Value C’}$ ) AND ((‘Access Time’ is ‘PM’) OR  
(‘Date of Creation’ is after 1/1/2000))

The calculation expression C3 can also be evaluated for each of the records ( $R_1 \dots R_n$ ) individually in order to determine whether the sum of data stored in the first and second fields ( $F1$  and  $F2$ ) are greater or equal to the ‘Constant Value K’ and whether either the record is accessed in the ‘PM’ time or the ‘date of creation’ of the record is after January 1, 2000. The ‘access time’ and the ‘date of creation’ can, for example, represent the state variables of a database.

## 5.2. Independent Claim 38

Independent claim 38 pertains to a computer readable medium. However, claim 38 recites similar features as those recited in claim 11 summarized above.

## 6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Ground I: Claims 11-15 and 38-42 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Bapat et al.* (U.S. Patent No. 6,236,996 B1) in view of Elmasri et al. (Fundamentals of Database System).

Ground II: Claims 11-15 and 38-42 are rejected under 35 U.S.C. § 101 for allegedly reciting non-statutory subject matter.

Ground III: Claims 11 and 38 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Ground IV: Claims 11 and 38 are rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement.

## 7. ARGUMENT

7.1. **Ground I:** Claims 11-15 and 38-42 rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Bapat et al.* (U.S. Patent No. 6,236,996 B1) in view of Elmasri et al. (Fundamentals of Database System).

7.1.1. *Bapat et al. does NOT teach or suggest defining a calculation expression as a variable expression defined based on a field of data used in records stored in a database, wherein the calculation expression can be evaluated based on the field of data, thereby allowing access to each individual record of the database to be selectively controlled based on a value of a field of data stored for each of the records of the database (Claims 11 and 38)*

The Examiner's rejection of claims 11-15 and 38-42 under §103(a) is primarily based on a Granted Permission Table shown in Figure 15A of *Bapat et al.* which is reproduced below.

Granted Permissions Table for Table 1			
	User Name	Object Name	Operation Type
1502	user_x	object_xyz	SELECT
	user_x	object_qrs	UPDATE
	user_y	object_xyz	SELECT
	user_y	object_abc	DELETE
	user_z	object_def	SELECT
1510	group_a	object_hij	SELECT
	group_z	object_jkl	SELECT

More particularly, in the Final Office Action, the Examiner has asserted that “each row of the Granted Permissions Table is defined by a meaningful combination of variable characters or variable expression” (Final Office Action, page 13).

Initially, it is respectfully submitted that the Granted Permissions Table of *Bapat et al.* pertains to objects. An object is well known as a fundamental concept of object oriented computing and clearly distinguishable from a record stored in a database.

Notwithstanding this distinction, contrary to the Examiner’s assertion, it is respectfully submitted that each row of the Granted Permissions Table of *Bapat et al.* is not a variable expression. It is apparent that each item in each row has a predetermined or fixed value. For example, row 1 specifies the known and determined values of a user, object and an operation type, namely, user\_x, object\_xyz, and SELECT. As such, it is respectfully submitted that no row of the Granted Permissions Table of *Bapat et al.* can possibly be considered to be a calculation expression defined based on variable data.

Furthermore, it is respectfully submitted that no row of the Granted Permissions Table of *Bapat et al.* defines an expression based on a field of data used in multiple records stored in a database. Notwithstanding the fact that *Bapat et al.* pertains to objects and not records of a database, it is apparent that each row of the Granted Permissions Table of *Bapat et al.* explicitly specifies access to an object regardless of the actual data stored in the object. In other words, permission to access an object can be determined solely based on what is described in the Granted Permissions Table of *Bapat et al.* Thus, access to an object can be granted

independent of the data stored by the object. In contrast, the claimed invention recites a variable expression that is defined based on a field of data used in a plurality of records, and therefore determining whether to grant access to a particular record is dependent on the actual data stored in that field for that particular record.

Still further, it is respectfully submitted that no row of the Granted Permissions Table of *Bapat et al.* can be used to selectively control access to multiple records. Again, notwithstanding the fact that *Bapat et al.* does not pertain to records of a database and assuming purely for the sake of argument that each row of the Permissions Table of *Bapat et al.* somehow defines a “meaningful combination of variable characters or variable expression” pursuant to the Examiner’s assertion, it is apparent the no single row of the Permissions Table of *Bapat et al.* can be evaluated for multiple objects. In other words, even assuming that each row of the Permissions Table of *Bapat et al.* is some kind of an expression, it is apparent that this type of expression cannot be evaluated multiple times in order to determine access to multiple entities of a database, regardless of whether these entities are objects in a distributed environment or records stored in a database.

It should be noted that the Granted Permissions Table of *Bapat et al.* taken as a whole does not teach a calculation expression as a variable expression defined based on a variable field of data used in multiple records stored in a database. *Bapat et al.* teaches a Granted Permissions Table with fixed terms. It is respectfully submitted that those skilled in the art readily appreciate the distinction between a table of fixed terms and a variable expression defined based on one or more variables. In addition, the Granted Permissions Table of *Bapat et al.* does not define a variable expression defined based on a variable field of data used in records stored in a database. Rather, the Granted Permissions Table of *Bapat et al.* is an external table that explicitly specifies access rights of individual users to individual objects.

Accordingly, it is respectfully submitted that the Permissions Table of *Bapat et al.* does not define a variable expression that can be evaluated based on a field of data stored in multiple records (or even objects). Clearly, the methodology of *Bapat et al.* teaches searching a table of fixed terms for a particular entry in order to control access to an object. It is respectfully submitted that there is a clear distinction between searching a table of fixed terms and evaluating a variable expression. As such, it is respectfully submitted that the Granted Permissions Table of *Bapat et al.*

does not teach or even remotely suggest defining a variable expression that can be evaluated to define access for multiple records (or even objects). In fact, *Bapat et al.* teaches away from defining a single expression that can be evaluated to define access for multiple records as it teaches providing both a Granted Permission Table (Figure 15A) and a Denied Permissions Table (Figure 15B) in order to provide a comprehensive approach to the general problem of controlling access to objects.

Those skilled in the art readily appreciate the advantages that a calculation expression provides over a conventional table that explicitly specifies the permissions (or denials) as fixed terms. One advantage is that there is no need to construct a table that explicitly states multiple possibilities. Also, there is no need to search one or more tables for an entry. This means that less storage and/or effort may be needed since a calculation expression can be evaluated only when needed (e.g., dynamically at runtime) to determine whether access to a record should be granted. Furthermore, a calculation expression provides an extremely powerful tool that can be used to define extremely complex expressions that could not easily be provided statically in a table of fixed terms. By way of example, a calculation expression can be defined based on a state variable of a database (e.g., current time, last time accessed, last person accessed) (see, for example, claim 14).

As such, one of skilled in the art will readily realize the claimed invention is a clear departure from the teaching of *Bapat et al.* where instead of implementing tables that explicitly specify access rights as fixed terms, a variable expression can be defined and evaluated when needed in order to determine access rights.

Accordingly, it is respectfully submitted that the Examiner's rejection is improper because *Bapat et al.* does not teach defining a calculation expression as a variable expression defined based on a field of data used in multiple records stored in a database, wherein the calculation expression can be evaluated based on the field of data, thereby allowing access to each individual record of the database to be selectively controlled based on a value of a field of data stored for each of the records of the database.

Moreover, it is respectfully submitted that the cited art does not teach or even remotely suggest these features. Accordingly, it is respectfully submitted that

independent claims 11, 38 and their dependent claims are patentable over the cited art for at least these reasons.

*7.1.2. Bapat et al. does NOT teach or suggest defining a calculation expression that can be evaluated based on a state variable of a database (claim 14)*

It should be noted that the dependent claims recite additional features that render them patentable over the cited art for additional reasons. For example, claim 14 additionally recites:

“wherein said calculation expression can be evaluated at least partly based on at least one state variable of said database, wherein said state variable can indicate the condition of an element of said database at a particular time.”

It is noted that *Bapat et al.* states that “ a special operation type value, such as a database NULL value, can be used to represent “all operation types” which would give global grant (Col. 26, lines 55-63). However, it is respectfully submitted that representing all objects or operations with a special value such as NULL does not teach or suggest a calculation expression that can be evaluated based on a state variable of a database. In fact, such global representation requires no evaluation for individual records (or even objects) as by definition it provides or denies access to all of them.

*7.1.3. Bapat et al. does NOT teach or suggest evaluating a calculation expression for a plurality of records based on a field of data stored for each record (claim 11 and 38)*

In the Final Office Action, the Examiner has asserted that checking the Granted Permissions Table of *Bapat et al.* “to see if user has specific granted items” teaches evaluating a calculation expression based on a field of data stored for multiple records (Final Office Action, page 13). Initially, it is respectfully submitted that this assertion contradicts the Examiner’s earlier assertion that each row of the Granted Permissions Table of *Bapat et al.* is a calculation expression. If a row of the Granted Permissions Table of *Bapat et al.* can be considered to be a calculation expression, the Examiner needs to show that *Bapat et al.* teaches evaluating the row for multiple records (or at least multiple objects). Furthermore, checking a permission table to determine whether an entry exists (or does not exist) for a particular record is not the

same as evaluating a calculation expression multiple times. Still further, searching a table to find an entry does not teach evaluating a variable expression based on data stored in a particular field of a record in order to determine whether to grant access to that particular record. Again, it should be noted that *Bapat et al.* teaches using both a Granted Permissions Table and a Denied Permissions Table (Figures 15A and 15B). Hence, the methodology of *Bapat et al.* teaches away from evaluating a single calculation expression in order to control access to multiple records stored in a database as it teaches searching not just one but multiple tables in order to control access to objects.

*7.1.4. Bapat et al. does NOT teach or suggest determining at least one value for a field of data stored in a record and using it to evaluate a variable expression in order to control access to that record (claims 11 and 38)*

Contrary to the Examiner's assertion, it is respectfully submitted that checking a "grant" table to see if a user has specific "granted items" does not teach these features. It is respectfully submitted that *Bapat et al.* does not teach or suggest determining a value for a field of data in a particular record and using it to evaluate a variable expression to control access to the record. Instead, access is controlled externally with respect to the data stored in the objects by means of permission and deny tables that specifically state whether access to an object is granted or denied.

*7.1.5. The Examiner has failed to establish a *prima facie* case of obviousness because the Examiner has failed to address the claimed feature of: "defining a calculation expression for a password" (claims 11 and 38)*

Claim 11 recites defining a calculation expression for an identified password associated with one or more users of a database. In the Final Office Action, the Examiner has admitted that *Bapat et al.* does not teach this claimed feature (Final Office Action, page 15). In order to cure this deficiency, the Examiner needs to at least show that defining a calculation expression for a password is taught. Instead, the Examiner has merely asserted that *Elmasri* teaches "a method for protecting access to a database system by identifying a password that is associated with one or more users of said database" (Final Office Action, page 15). It is respectfully submitted that the mere assertion that a password can be associated with one or more

users does not even address the claimed feature of defining a calculation expression for a password. As such, the Examiner has failed to address all of the claimed features and consequently has failed to establish a *prima facie* case of obviousness.

*7.1.6. The cited art does not teach or suggest defining a calculation expression for a password (claims 11 and 38)*

Moreover, it is respectfully submitted that the cited art does not teach or suggest defining a calculation expression for a password. Accordingly, it is respectfully submitted that the claimed invention is patentable over the cited art for this additional reason.

*7.1.7. The Examiner has failed to establish a *prima facie* case of obviousness because the Examiner has failed to provide a motivation or suggestion for defining a calculation expression for a password (claims 11 and 38)*

In the Final Office Action, the Examiner has asserted that “by using a password to identify a user as taught by Elmasri, the database system is secured and data is protected from misuse and against intruders” (Final Office Action, page 15).

It is respectfully submitted that the mere assertion that the references can be combined or modified and/or the claimed invention is within the capabilities of one of ordinary skilled in the art, is not sufficient to establish a *prima facie* case of obviousness (MPEP 2143.01, paragraphs III. and IV). Clearly, the mere assertion that a proposed combination would result in a beneficial result (i.e., a secure system) is not enough to establish a *prima facie* case of obviousness. In this case, the Examiner needs to at least provide a motivation or suggestion for defining a calculation expression for a password in the first place so that any beneficial result can be realized.

**7.2. Ground II: Claims 11-15 and 38-42 rejected under 35 U.S.C. § 101**

In the Final Office Action, the Examiner has asserted that claims 11 and 38 do not produce a tangible and useful result. Contrary to the Examiner’s assertion, it is respectfully submitted that the recited feature of determining a result that effectively indicates whether to grant one or more users access to a record stored to a database is

a concrete, tangible and useful result as it allows selectively controlling access to records stored in the database.

Nevertheless, in order to reduce the number of the issues on Appeal, the Applicant offers to place the claims in a form believed to be more preferred by the Examiner. Accordingly, It is respectfully requested that the Examiner enter the Amendment submitted herewith and withdraw the rejection under 35 U.S.C. § 101.

7.3. **Ground III:** Claims 11 and 38 rejected under 35 U.S.C. § 112, first paragraph

In the Final Office Action, the Examiner has asserted that the specification is not described in such a way to reasonably convey to one skilled in the art how to use at least one value as input to a calculation expression in order to evaluate a calculation expression for a record.

With reference to Figure 7 of the present application, the specification states that the exemplary calculation expression 664 specifies that the field “billing state” is equal to “CA” (California) (Specification, page 14). Further, with reference to Figure 8, the specification states that:

“an exemplary file ACCOUNTS that includes records “ACC001,” “ACC002,” “ACC003,” and “ACC004” is displayed in a window 800.” The specification further states that the calculation expression 604 of Figure 7 (Billing state = “CA”) can be used to control access to a record. More particularly, the specification states: “Recalling the exemplary calculation expression 604 of Figure 7, given this expression, access to a record with respect to an operation would be granted only when the field “State” (Billing State) of that record is equal to “CA”. Accordingly, using the calculation expression 604, access to records shown in Figure 8 with respect to editing privileges, for example, would be limited to editing records “ACC001”, “ACC002”, and “ACC004”. Thus, the user will not be granted editing privileges to record “ACC003” since the field “State” of this record is not equal to “CA”. In this way, a calculation expression can be evaluated with respect to a record to determine whether to grant or deny access to each record” (Specification, page 14).

It is respectfully submitted that the specification makes it abundantly clear to one of ordinary skill in the art at the time of the invention that evaluating a calculation expression can comprise determining the actual value for a field of data stored for a particular record in a database and effectively using the actual value as input (or an

input parameter) with respect to the calculation expression in order to evaluate the calculation expression. With reference to Figure 8, the specification clearly conveys that the actual value of a field of a particular record can, for example, be the actual value of the field “State” in the record “ACC003” (Shown on Figure 8). This actual value happens to be “NY” which is not equal to the value “CA” used in the calculation expression, thereby resulting in denial of access for that particular record (record identified by “ACC003”) when the calculation expression is evaluated.

Furthermore, it is respectfully submitted that one of ordinary skill in the art would readily know that evaluating a calculation expression that is defined based on a field of data requires determining the actual value of data stored in the corresponding field of a particular record in order to evaluate the calculation expression for the particular record. It is also abundantly clear that the actual value of the field has to be used as input to the calculation expression in order to evaluate the calculation expression (i.e., the actual value would be substituted in place of the variable field in the same way as an actual value (e.g., 10) for a variable X can be input to an expression **“if X < 5 then ...”** in order to evaluate the expression).

Finally, the Board’s attention is respectfully directed to Microsoft Computer Dictionary, Fifth Edition, which defines a field as “a location in a record in which a particular type of data is stored.” Accordingly, it is respectfully submitted that one of ordinary skill in the art would readily know that evaluating a calculation expression that is defined based on a field of data requires determining the actual value stored for that field and using the value as input to the calculation expression in order to evaluate the calculation expression to obtain a result (or output) for the calculation expression (e.g., determining a true or false value for the result).

**7.4. Ground IV:** Claims 11 and 38 are rejected under 35 U.S.C. § 112, second paragraph

In the Final Office Action, the Examiner has asserted that claims 11 and 38 omit an essential step because only the first record of a plurality of records is evaluated. It is respectfully submitted that claims 11 and 38 recite:

“evaluating said calculation expression for each of said plurality of records.”

Hence, contrary to the Examiner's assertion, these claims do NOT omit an essential step as the calculation expression is evaluated for multiple records in order to control access to multiple records.

Claims 11 and 38 further clarify that evaluating the expression for a particular record (first record) comprises the additional operations of: (a) determining at least one value, (b) using the at least one value, and (c) determining a first result. It is respectfully submitted that it is not essential that these steps be recited for a second record. As noted above, it is respectfully submitted that one of ordinary skill in the art would readily know that evaluating a calculation expression that is defined based on a field of data requires determining the actual value stored for that field and using the value as input to the calculation expression in order to evaluate the calculation expression to obtain a result (or output) for the calculation expression (e.g., determining a true or false value for the result).

Nevertheless, in order to reduce the number of issues before the Board, the Applicants offers to amend the claims 11 and 38 to recite the aforementioned steps for a second record. Accordingly, it is respectfully requested that the Examiner enter the amendment submitted herewith and withdraw the rejection under section 35 U.S.C. § 112, second paragraph.

## **8. CONCLUSION**

In view of the foregoing, it is respectfully submitted that the Examiner's rejection of claim 11-15 and 38-42 is erroneous. Accordingly, the rejection of claims 11-15 and 38-42 should be reversed.

Respectfully submitted,

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## 9. CLAIMS APPENDIX

### CLAIMS ON APPEAL

1-10. (Canceled)

11. (Previously Presented) A method of controlling access to records stored in a database, said method comprising:

identifying a password that is associated with one or more users of said database;

defining a calculation expression for said identified password, wherein said calculation expression is a variable expression defined based on at least one field of data used in a plurality of records stored in said database, wherein said calculation expression can be evaluated at least partly based on said at least one field of data used in said plurality of records, wherein said at least one field of data is a variable which may have different values for each of said plurality of records, thereby allowing access to each individual record of said plurality of records to be selectively controlled based on at least one value of said at least one field of data stored for each of said plurality of records of said database, and wherein said calculation expression defines access privileges of said one or more users with respect to at least one operation that may be requested to be performed by said one or more users on said plurality of records of said database;

receiving a request to perform said at least one operation on said plurality of records of said database, said request being identified as a request made by said one or more users associated with said password; and

evaluating said calculation expression for each of said plurality of records, based on said at least one field of data, when said request has been received, wherein said evaluating comprises: (a) determining at least one value for said at least one field of data stored for a first record of said plurality of records, (b) using said at least one value as input to said calculation expression to evaluate said calculation expression for said first record, and (c) determining a first result for said calculation expression

based on said evaluation of said calculation expression for said first record, wherein said first result effectively indicates whether to grant access to said first record.

12. (Original) A method as recited in claim 11, wherein said at least one operation can be a browse, an edit, or a delete operation.
13. (Original) A method as recited in claim 11, wherein said calculation expression is not explicitly defined for said at least one operation but said calculation expression is one that has been defined for another operation which has been considered as a related operation to said at least one operation.
14. (Previously Presented) A method as recited in claim 11, wherein said calculation expression can be evaluated at least partly based on at least one state variable of said database, wherein said state variable can indicate the condition of an element of said database at a particular time.
15. (Original) A method as recited in claim 14, wherein said method further comprises:  
granting temporary or limited access to said at least one record to allow said evaluating of said calculation expression.

16-37. (Canceled)

38. (Previously Presented) A computer readable medium including computer program code for controlling access to records stored in a database, said computer readable medium comprising:  
computer program code for identifying a password that is associated with one or more users of said database;  
computer program code for defining a calculation expression for said identified password, wherein said calculation expression is a variable expression defined based on at least one field of data used in a plurality of records stored in said database, wherein said calculation expression can be evaluated at least partly based on said at least one field of data used in said plurality of records, wherein said at least one field of data is a variable which may have different values for each of said

plurality of records, thereby allowing access to each individual record of said plurality of records to be selectively controlled based on at least one value of said at least one field of data stored for each of said plurality of records of said database, and wherein said calculation expression defines access privileges of said one or more users with respect to at least one operation that may be requested to be performed by said one or more users on said plurality of records of said database;

computer program code for receiving a request to perform said at least one operation on said plurality of records of said database, said request being identified as a request made by said one or more users associated with said password; and

computer program code for evaluating said calculation expression for each of said plurality of records, based on at least one field of data, when said request has been received, wherein said evaluating comprises: (a) determining at least one value for said at least one field of data stored for a first record of said plurality of records, (b) using said at least one value as input to said calculation expression to evaluate said calculation expression for said first record, and (c) determining a first result for said calculation expression based on said evaluation of said calculation expression for said first record, wherein said first result effectively indicates whether to grant access to said first record.

39. (Previously Presented) A computer readable medium as recited in claim 38, wherein said at least one operation can be a browse, an edit, or a delete operation.

40. (Previously Presented) A computer readable medium as recited in claim 38, wherein said calculation expression is not explicitly defined for said at least one operation but said calculation expression is one that has been defined for another operation which has been considered as a related operation to said at least one operation.

41. (Previously Presented) A computer readable medium as recited in claim 38, wherein said calculation expression can be evaluated at least partly based on at least one state variable of said database.

42. (Previously Presented) A computer readable medium as recited in claim 38, further comprising:

computer program code for granting temporary or limited access to said at least one record to allow said evaluating of said calculation expression.

43-58. (Canceled)

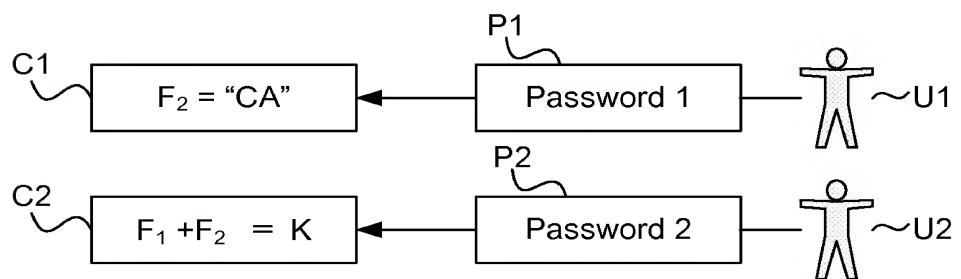
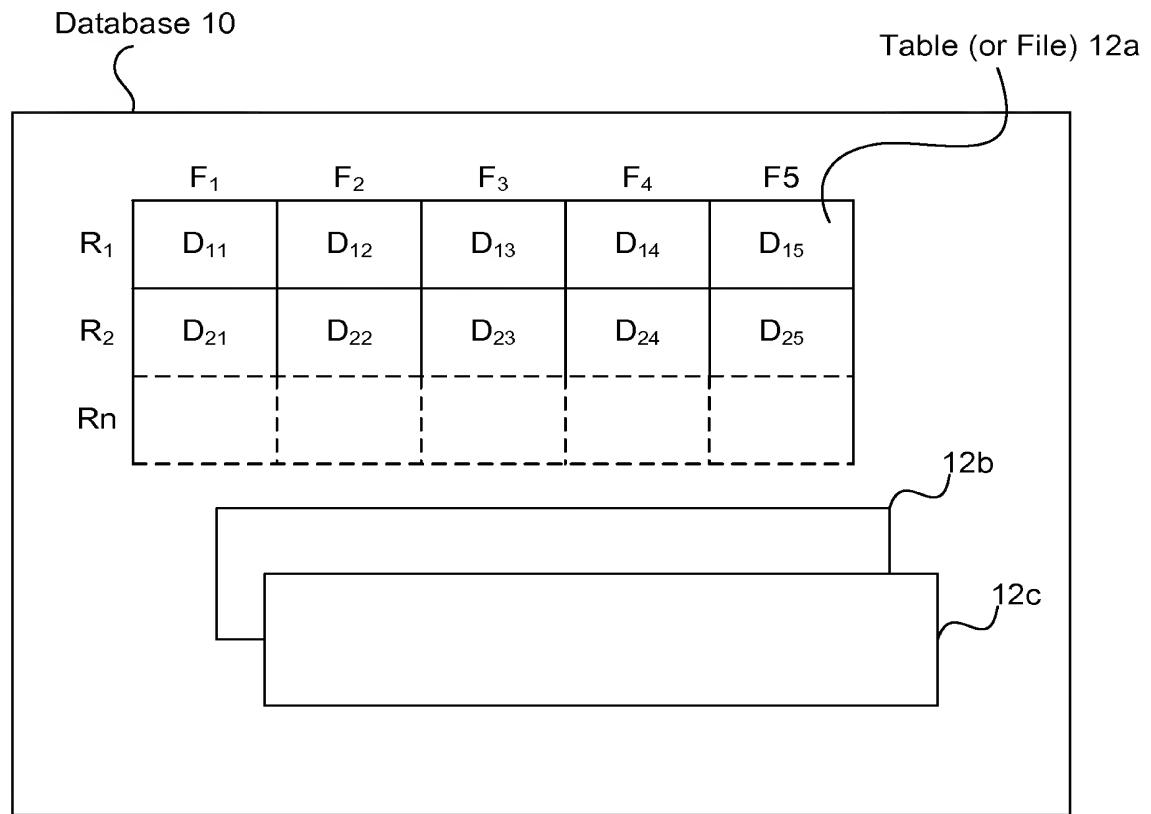
## **10. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to §§ 1.130, 1.131, or 1.132 of 37 CFR, nor has any other evidence been entered by the examiner.

## **11. RELATED PROCEEDINGS APPENDIX**

There have been no decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37(c)(1).

## 12. APPENDIX A



# Figure A